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ABSTRACT

This digest reviews research on the status of rural student achievement and schooling conditions and describes variations across the nation and the states. Between 1992 and 1996, rural students began to outperform nonrural students on the 8th-grade mathematics assessment of the National Assessment of Educational Progress. Despite this aggregate national trend, the states varied substantially in rural students' mathematics achievement and in the achievement gap between rural and nonrural students. An examination of rural schooling conditions that affect student achievement indicates that rural schools, most of which are small, harbor inherent advantages and disadvantages. However, overly generalized conclusions about rural schooling conditions may obscure large variations among and within states. Interstate variations in the rural-nonrural achievement gap are closely related to interstate variations in key schooling conditions, such as instructional resources and professional training. Research in seven states on the effects of district or school size and poverty found that the effects of size on excellence (level of average achievement) varied greatly across states, while the effects of size on equity (the relationship between achievement and socioeconomic status) was highly consistent across states. A lack of consensus about what works for improving rural education is complicated by the variance in rural schooling conditions and in definitions of "rural." (Contains 14 references.) (SV)

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Interstate Variations in Rural Student Achievement and Schooling Conditions

Jackyung Lee

Rural student achievement provides one important barometer for monitoring national progress in public education. Rural education often has been discussed as a deficit model of instruction from which relatively low outcomes can be expected (Edington & Koehler, 1987). While this perspective has been reinforced by some local studies, it is not supported by national data (Fan & Chen, 1999; Lee & McIntire, 1999; Stern, 1994). At the same time, aggregate national data conceal that the achievement of rural students varies significantly from state to state (Lee & McIntire, 2001). This Digest reviews research on the status of rural student achievement and schooling conditions and describes their variations across the nation and the states. It examines (1) national trends and interstate variations in rural student achievement, (2) rural schooling conditions affecting achievement, (3) interstate variations in rural school conditions, and (4) the challenge of determining "what works" in rural schooling.

National Trends and Interstate Variations

The achievement scores of rural students have been comparable to national averages in virtually every subject tested (National Center for Education Statistics [NCES], 1991). For example, data from the 1996 National Assessment of Educational Progress (NAEP) mathematics assessment, when compared with the 1992 data, showed that the most significant improvement occurred in the rural/small town category (NCES, 1997).[1] In 1996 rural students started to outperform nonrural students on the NAEP 8th-grade mathematics assessment. Rural students' average math scale score was 276, whereas nonrural students' average score was 268; the 8-point gap amounts to approximately one-fourth of the pooled standard deviation.[2]

Despite these aggregate national trends, Lee and McIntire (2001) found substantial variations among states in rural students' mathematics achievement and in the achievement gap between rural and nonrural students. First, some rural states performed at the top, while others performed below the national average. Second, among the 35 states that participated in the NAEP 1992 and 1996 8th-grade math assessments, 14 states had significant achievement gaps between rural and nonrural students. Interestingly, rural students performed better than nonrural students in 7 of these states and worse in the other 7.

The study also found interstate variations in rural students' mathematics achievement gain over the 1992-96 period (Lee & McIntire, 2001). While both nonrural and rural students made significant progress in 4 states, rural students made significant progress in 8 states. Rural students did not make significant progress in the remaining 23 states participating in the 1992 and 1996 NAEP 8th-grade mathematics assessments.

Rural Schooling Conditions Affecting Achievement

An examination of rural schooling conditions that affect student achievement indicates that rural schools may harbor inherent disadvantages, as well as advantages. While rural schools are often small and conducive to higher performance for disadvantaged students, at the same time they may suffer from poor educational conditions. Sparse population bases often result in geographic and cultural isolation, limited economic development, and restricted educational opportunities (McCombs & Bansberg, 1997). Rural schools typically lack the facilities, physical plants, course materials, and educational programs that typify larger, more resource-rich districts. Also, rural teachers generally have less professional preparation (Stern, 1994).

On the other hand, research on small schools (which included a large majority of rural schools) revealed that small school size can mitigate the influence of poverty (Howley, Strange, & Bickel, 2000). The resource limitations rural schools often experience can be compensated for by the supportive ethos found in smaller communities and their generally smaller schools (Stern, 1994). Many rural schools feature low student-teacher ratios, individualized instruction and attention, cooperative learning opportunities, close relationships and ties to the community, and strong staff commitment (DeYoung, 1987; McREL, 1990). According to the Schools and Staffing Survey, rural schools tend to be a better place for learning than their urban or suburban counterparts in terms of teacher and student absenteeism, safe learning environment, student misbehavior, and alcohol and drug use (Stern, 1994).

Interstate Variations in Rural School Conditions

Recent studies challenge our monolithic view of rural education. Overly generalized conclusions about rural schooling conditions may obscure substantial variations among the states (Beeson & Strange, 2000), let alone differences within states, which are often the result of factors other than policy. Lee and McIntire (2001) found that interstate variations in rural students' mathematics achievement relative to their nonrural counterparts were closely related to interstate variations in key schooling conditions (e.g., instructional resources, professional training, safe/orderly climate).[3] In their study, Connecticut and Virginia, two states with somewhat different proportions of rural students (37 percent in Connecticut and 28 percent in Virginia), showed opposite patterns of rural vs. nonrural achievement gaps. In Connecticut, where rural students had relatively better schooling conditions, rural students performed significantly higher than their nonrural counterparts. In Virginia, where rural students had relatively worse schooling conditions, nonrural students performed significantly better than their rural counterparts.

There also has been an effort to compare findings across states using research conducted in individual states. The best example of this effort was the synthesis of research on the effects of district/school size and poverty in seven states (Alaska, California, Georgia, Ohio, Montana, Texas, and West Virginia). The synthesis found that the effects of

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size on excellence (as measured by the level of average achievement) varied substantially by state while the effects of size on equity (as measured by the relationship between achievement and SES) were highly consistent from state to state (Howley et al., 2000). This kind of cross-state comparison has implications for state policies. State policy agendas for improving the outcomes of rural education should assess the unique schooling conditions and their effects on student achievement.

During the past two decades, state legislatures have issued numerous mandates directed toward improving the quality of public education. Rural and small school districts with low fiscal capacity have often found these requirements difficult to meet (Hughes, 2000). In some cases, through extraordinary local effort, full compliance with state mandates has been met. In other cases, reform legislation has resulted in consolidation and reorganization of rural schools and school districts (Stern, 1994). The perennial challenge faced by rural schools is to provide cost-effective and high-quality schooling experiences as standards and expectations are raised for all students.

The Challenge of Determining "What Works"

Given that many rural students are poor and attend schools where instructional resources and course offerings are limited, the level of their academic performance relative to their nonrural counterparts is encouraging. Indeed, the literature shows that rural schools, having achieved so much with relatively fewer resources, can provide "a model of strength" worth studying and emulating (see Lee & McIntire, 1999, for demonstration with national data).

However, there is lack of consensus about what works for improving rural student achievement—a situation complicated by the variance in rural schooling conditions and in definitions of "rural." Also noteworthy is the finding that in some states rural students scored higher than their nonrural counterparts and in others they scored lower. The variability of achievement can take place within states as well as between states, and these differences are often the result of factors other than policy. Comparison of rural and nonrural education is challenged by the variations in definitions of rural. The Census Bureau definitions do not take into consideration the type of employment in the area and the degree of isolation (see Khattri, Riley, & Kane, 1997, for different definitions of "rural"). In need of further examination is the issue of how different definitions of "rural" change the status of rural student achievement. Meanwhile, it remains to be seen whether rural students' academic growth will continue to outpace that of their nonrural counterparts.

Notes

1. This classification system is based on geographic characteristics of the schools' locations and is related to the Census Bureau definitions of metropolitan statistical areas (MSAs), population size, and density. "Rural" includes all places and areas with a population of less than 2,500. A small town is defined as a place outside an MSA with a population of less than 25,000 but greater than or equal to 2,500. This definition differs from the "extreme rural" category in past NAEP reports that encompasses students in nonmetropolitan areas with a population below 10,000 and where many parents are farmers or farm workers. Discontinuing the classification that combined community size with employment and SES, NAEP currently reports results by Census-based type of location. Schools in central city, urban fringe, or large town areas are classified as "nonrural," and schools in rural areas or small towns as "rural." In comparison with students in rural/small towns, students in central city areas scored 16 points less and students in urban fringe/large town areas scored 2 points less.
2. Results from the 2000 NAEP mathematics assessment were not available at the time this Digest was prepared.
3. The state profiles of rural and nonrural student achievement and schooling conditions are available online at http://www.ume.maine.edu/naep.

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